

Latex FAQ

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What are the categories of glove-associated skin reactions?

	Irritant Contact Dermatitis	Allergic Contact Dermatitis (Type IV [delayed] Hypersensitivity)	Latex Allergy (Type I [immediate] Hypersensitivity or NRL* protein allergy)
Causative Agent	Toxic chemicals (e.g., biocides, detergents); excessive perspiration; insufficient rinsing or drying of hands; irritating chemicals used in glove manufacture	Chemical contact sensitizers used in glove manufacture: accelerators, antioxidants, preservatives; other chemical sensitizers used in dentistry: biocides, detergents, acrylates, eugenol, local anesthetics	Latex proteins from <i>Hevea brasiliensis</i> (rubber tree)
Dermal Reactions	<ul style="list-style-type: none"> • Usually confined to the area of glove contact • Acute: Red, scalded appearance; excessive dryness • Chronic: Dry, thickened skin, crusting, deep painful cracking, scabbing sores, peeling 	<ul style="list-style-type: none"> • Symptoms can appear up the arm beyond the boundary of glove contact • Acute: Red appearance, small blisters • Chronic: Dry thickened skin, crusting, scabbing sores, vesicles, peeling (appears four to 96 hours after exposure) 	<ul style="list-style-type: none"> • Type I reaction can occur as soon as two to three minutes, or as long as several hours after skin or mucous membrane contact with the protein allergens • Acute: Hives, swelling, runny nose, nausea, abdominal cramps, dizziness, low blood pressure, bronchospasm, anaphylaxis • Chronic: As above, increased potential for extensive, more severe reaction
Diagnosis	<ul style="list-style-type: none"> • By exclusion of Type IV and Type I hypersensitivity • Not the result of an immunological reaction 	By skin patch test and consultation with a dermatologist	By skin-prick test, blood test and consultation with an allergist

*NRL=natural rubber latex

Modified from: American Dental Association, Council on Scientific Affairs. The Dental Team and Latex Hypersensitivity. *J Am Dent Assoc* 1999;130:257-264.

What are some considerations if dental healthcare personnel are allergic to latex?

Dental healthcare personnel experiencing latex allergy symptoms should seek definitive diagnosis by a qualified healthcare professional to determine the specific etiology and appropriate treatment, as well as work restrictions and accommodations where applicable.

Anyone who is allergic to latex will need to take precautions at work and outside the workplace as latex is used in a variety of other common products in addition to gloves. Dentists need to discuss with the worker and their physician about what is needed to protect the worker with a latex allergy. The following recommendations are based on those issued by the National Institute of Occupational Health and Safety (NIOSH):

- If definitively diagnosed with allergy to natural rubber latex (NRL) protein, avoid, as far as feasible, subsequent exposure to the protein and only use nonlatex (synthetic gloves). Other staff members in the dental practice should wear either a synthetic or powder-free latex glove.

- Use only synthetic or powder-free rubber dams.

- Dental personnel can further reduce occupational exposure to NRL protein by taking the following steps:
 - using reduced protein, powder-free latex gloves;
 - frequently changing ventilation filters and vacuum bags used in latex contaminated areas;
 - checking ventilation systems to ensure they provide adequate fresh or recirculating air;
 - frequently cleaning all work areas contaminated with latex dust;
 - educating dental staff on the signs and symptoms of latex allergies.

Why are powder-free gloves recommended?

Proteins responsible for latex allergies have been shown to attach to powder that is used on some latex gloves to facilitate their donning. When powdered gloves are worn, more latex protein reaches the skin. Also, when donning and removing powdered gloves, latex protein/powder particles become aerosolized, where they can be inhaled and contact body membranes. As a result, dental healthcare personnel with allergies can experience cutaneous, respiratory and conjunctival exposure-related symptoms and possibly enhance sensitization to latex proteins in others. In contrast, work areas where only powder-free gloves are used show low levels or undetectable amounts of the allergy-causing proteins and reduce natural rubber latex allergy symptoms.

What are some considerations for providing dental treatment to patients with latex allergy?

Persons with a latex allergy should not have direct contact with latex-containing materials and should be treated in a “latex safe” environment. Individuals also may be allergic to the chemicals used in the manufacturing of natural rubber latex gloves, as well as metals, plastics or other materials used in the provision of dental care. A thorough health history and appropriate avoidance of contact with potential allergens can minimize the possibility of adverse reactions. Considerations in providing safe treatment for patients with possible or documented latex allergy include (but are not limited to) the following:

- Screen all patients for latex allergy (e.g., health history, medical consultation when latex allergy is suspected).
- Be aware of some common predisposing conditions (e.g., patients with a history of spina bifida, urogenital anomalies, or allergies to avocados, kiwis, nuts, or bananas).
- Be familiar with the different types of hypersensitivity – immediate and delayed – and the risks that these pose for patient and staff.
- Consider sources of latex other than gloves. Dental patients with latex allergy histories may be at risk from a variety of dental products including, but not limited to, prophylaxis cups, rubber dams, and orthodontic elastics.

- Use only non-latex containing materials in the treatment environment as alternatives. Ensure a latex-safe environment or one in which no personnel use latex gloves and no patient contact occurs with other latex devices, materials, and products.
- Remove all latex-containing products from the patient's vicinity. Adequately cover/isolate any latex containing devices that cannot be removed from the treatment environment.
- Be aware that latent allergens in the ambient air can cause respiratory and or anaphylactic symptoms in people with latex hypersensitivity. Therefore, it may be advisable to schedule patients with latex allergy in the first appointment of the day to minimize their inadvertent exposure to airborne latex particles. Frequently clean all working areas contaminated with latex powder/dust.
- Frequently change ventilation filters and vacuum bags used in latex-contaminated areas.
- Have latex-free kits (e.g., dental treatment and emergency) available at all times.
- Be aware that allergic reactions can be provoked from indirect contact as well as direct contact (e.g., being touched by someone who has worn latex gloves). Hand hygiene, therefore, is essential.
- Communicate latex allergy (e.g., verbal instructions, written protocols, posted signage) to other personnel to prevent them from bringing latex containing materials into the treatment area.
- If latex-related complications occur during or after the procedure, manage the reaction and seek emergency assistance as indicated. Follow current medical emergency response recommendations for management of anaphylaxis.

Selected References and Additional Resources

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